

2010 Innovations Awards Application

Deadline: March 1, 2010

ID # (assigned by CSG): **10-W-01AK**

Please provide the following information, adding space as necessary:

State: ALASKA

Assign Program Category (applicant): **PUBLIC SAFETY** (Use list at end of application)

1. Program Name **ALASKA AVIATION SAFETY PROJECT (AASP), AKA: AVIATION SAFETY PROGRAM (ASP)**

2. Administering Agency **DOT/PF-AVIATION DIVISION**

3. Contact Person (Name and Title) **NICK MASTRODICASA**

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8. Web site Address WWW.AK-AASP.ORG

9. Please provide a two-sentence description of the program. **Under a grant from NASA the ASP demonstrated its proof of concept by engineering 3D real-to-world scenery (satellite imagery) for aviation training purposes, on the ground, in a simulated environment which does not endanger aircrews.**

10. How long has this program been operational (month and year)? Note: the program must be between 9 months and 5 years old on March 1, 2010 to be considered. **JULY 2006 (STATE FUNDING).**

11. Why was the program created? What problem[s] or issue[s] was it designed to address?

This project was commenced to address the high rate of aviation fatalities in Alaska resulting from flying in some of the world's harshest conditions and terrain. On average, over the past decade, a human life has been lost to a fatal aviation crash approximately every two weeks. This places a tremendous cost on society and the aviation industry.

12. Describe the specific activities and operations of the program in chronological order. **This project began (2001) and remains a research and development project supported by NASA funding. The primary component of the ASP research and development addresses the augmentation, redundancy and extension of the Next Generation Air Transportation System (NGATS) specific to ADS-B commonly referred to as Capstone, which includes synthetic vision or a moving map in the cockpit. From this effort a proof of concept (2004) was achieved that produced 3D real-to-world scenery for use in aviation simulators.**

These datasets are specifically created in Microsoft Flight Simulator X (MSFSX) which is an inexpensive off the shelf software package that can be used at home by pilots. These datasets also run on larger more sophisticated aviation simulators located throughout the state and are available to everyone. The 13 most deadly mountain passes were released in 2005. In 2006 the Alaska State Legislature, realizing the benefits of this program, provided \$500,000 in capital improvement funds for the continuation of development and has, to date, continued funding.

In 2009 the ASP introduced Cue Based Training in response to NTSB recommendations. Cue based training realistically simulates regional or local flying conditions in a low cost and safe environment inclusive of regional or local weather phenomena and ground terrain characteristics. This substantially increases a pilot's skills with regard to situational awareness and in-cockpit decision making. It also substitutes expensive in-cockpit training with inexpensive simulator training and pilot evaluation, which is appealing to operators because they can evaluate an existing or prospective pilot's capabilities without expending large sums of operational dollars training or retraining a pilot while the prop/rotor is turning. This anticipates an increased level of training that is both affordable and effective while being voluntarily enforced by the operator due to substantial cost savings.

Later in 2009 the ASP established the DOT-Joint Project Office (JPO) to better address this problem. Contributing members of the JPO are the ASP/DOT, Federal Aviation Administration (FAA), National Institute of Occupational Safety & Health (NIOSH), National Oceanographic and Atmospheric Administration/National Weather Service (NOAA-NWS) and the Medallion Foundation. All parties now collaborate on funding efforts rather than compete. Every member brings specific expertise to bear on the issues of aviation safety. Again, in 2009 the FAA put the DOT/ASP under a five year contract to develop their cue based training program. Aviation fatalities in Alaska are now trending down. This is the result of many programs effect but the ASP has certainly contributed to reversing this trend.

13. Why is the program a new and creative approach or method? **This project has and continues to integrate and repurpose existing technologies to advance aviation safety. This program has identified innovative ways of achieving advanced training methods once reserved for major corporations and the military. And, it makes this available to all interested parties at no cost.**

14. What were the program's start-up costs? (Provide details about specific purchases for this program, staffing needs and other financial expenditures, as well as existing materials, technology and staff already in place.) **This program began in 2001 as a research and development project with a \$300,000 grant from NASA. Most of this project is outsourced to contractors and maintains only one full time state employee. To date the ASP has received close to \$8M in federal funding although a major portion of that funding has been utilized for wireless research and development as it pertains to aviation safety. The largest expense in producing these materials is the cost of satellite imagery acquisitions.**

15. What are the program's annual operational costs? **Approximately \$500,000/year. This does not included CIP funding.**

16. How is the program funded? **Legislative appropriation & federal contributions (JPO).**

17. Did this program require the passage of legislation, executive order or regulations? If YES, please indicate the citation number. **NO**

18. What equipment, technology and software are used to operate and administer this program? **A variety desktop solutions/hardware and rendering software are utilized to make satellite imagery three dimensional and flyable in MSFS-X. All equipment and software are commercially available off the shelf.**

19. To the best of your knowledge, did this program originate in your state? If YES, please indicate the innovator's name, present address, telephone number and e-mail address. **Yes, Jim Harpring (retired-address unknown at the time of this writing but is periodically in contact).**

20. Are you aware of similar programs in other states? If YES, which ones and how does this program differ? **NO.**

21. Has the program been fully implemented? If NO, what actions remain to be taken? **NO, the FAA has contracted the DOT/ASP to create datasets throughout the Western Regional management area and presumably beyond that based upon need.**

22. Briefly evaluate (pro and con) the program's effectiveness in addressing the defined problem[s] or issue[s]. Provide tangible examples. **As stated previously many efforts are responsible for the declining trend in aviation fatalities in Alaska, however, the ASP has certainly played a role in this achievement. For example, in 2009 there were only seven aviation related fatalities in comparison with an average of 25.44 fatalities a year for the previous nine years.**

PROS:

- **Ease of use, home PC or in a simulator;**
- **Low cost, Cost effective;**
- **Collaborative effort/expertise/funding;**
- **Increased situational awareness (terrain familiarization), &**
- **Improved in-cockpit decision making.**

CONS:

- **No known disadvantages.**

23. How has the program grown and/or changed since its inception? **This program has grown to become a collaborative effort of the JPO which collectively prioritizes and addresses aviation safety issues while exploring new and innovative ways to integrate and enlist new technologies.**

24. What limitations or obstacles might other states expect to encounter if they attempt to adopt this program? **Nothing out of the ordinary.**

CSG reserves the right to use or publish in other CSG products the information provided in this application. If your agency objects to this policy, please advise us in a separate attachment.

2

2010 Innovations Awards Application Program Categories and Subcategories

Use these as guidelines to determine the appropriate *Program Category* for your state's submission and list that program category on page one of this application. Choose only one.

Infrastructure and Economic Development

Business/Commerce

Economic Development

Transportation

Government Operations and Technology

Administration

Elections
Information Systems
Public Information
Revenue
Telecommunications

Health & Human Services

Aging
Children & Families
Health Services
Housing
Human Services

Human Resources/Education

Education
Labor
Management
Personnel
Training and Development
Workforce Development

Natural Resources

Agriculture
Energy
Environment
Environmental Protection
Natural Resources
Parks & Recreation
Water Resources

Public Safety/Corrections

Corrections
Courts
Criminal Justice
Drugs
Emergency Management
Public Safety

Save in .doc or rtf. Return completed application electronically to innovations@csg.org or mail to:

CSG Innovations Awards 2010
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Contact:

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This application is also available at www.csg.org.